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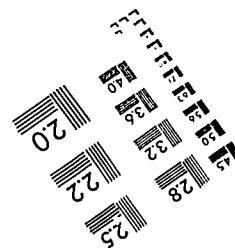
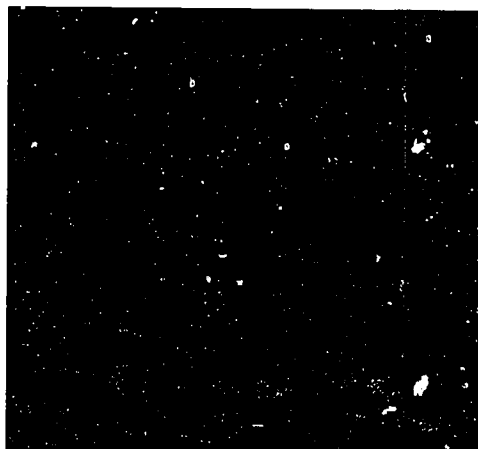
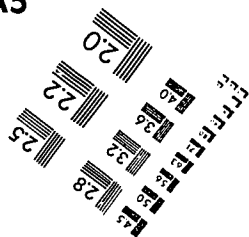
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ABSTRACT

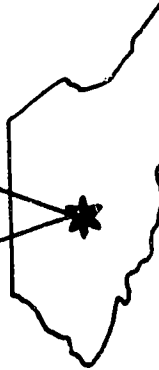
A study described part-time and small farmers (PT/SF) on the basis of their demographic characteristics and determined their farm management educational needs. Findings revealed that the majority of the PT/SF were males who operated farms of 50-150 acres for 11 or more years, were 35-44 years of age, and were high school graduates who principally produced crops. The four areas of farm management education needed by PT/SF were farm tax management, marketing farm products, determining farm insurance needs, and farm recordkeeping. Findings regarding a third objective--to determine the relationship between the selected demographic characteristics and the computed farm management educational needs of PT/SF--revealed a range of negligible to substantial relationships. The moderate to substantial positive relationships existed between type of principal farm enterprise and the categories of computed educational needs. The other negligible to low relationships indicated that farm management educational programs developed on the basis of the identified needed competencies would be equally suitable for PT/SF irrespective of their characteristics. Findings with respect to a fourth objective--to determine if the farm management educational needs of PT/SF in predominantly commercial counties were significantly different from that of PT/SF in predominantly noncommercial counties--revealed no significant differences. (YLB)

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# SUMMARY OF RESEARCH

DEPARTMENT OF  
AGRICULTURAL EDUCATION

The Ohio State University  
Columbus, Ohio 43210



## PERCEIVED FARM MANAGEMENT EDUCATIONAL NEEDS OF PART-TIME AND SMALL SCALE FARMERS IN SELECTED OHIO COUNTIES

Okon E. Uko and Larry E. Miller

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### INTRODUCTION

The concept of small farms is not new to the American agricultural scene. Small farmers have been a part of American agriculture since the Colonial settlement in America. The small scale farm, typified by the 160 acre requirement of the Homestead Act, was appropriate for the labor intensive technology of the time. This kind of farming was appropriate because it was compatible with the objective of establishing communities and creating jobs (Powers, 1979).

Many part-time and small-scale farmers have been facing problems in farming due to 1) lack of capital, 2) lack of necessary technological prerequisites, and 3) lack of involvement in farm program planning. These handicaps have rendered the part-time and small farmers (PT/SF) less competitive with the large commercial farmers. This lack of competitiveness more often than not resulted in foreclosures of small farms (Price, 1983; Powers, 1979; Jones et al, 1980).

The insecurity experienced by most PT/SF in Ohio has also been mirrored by such farmers elsewhere around the world.

A study of the educational needs of PT/SF was important in view of its potential contributions to the successes of this category of farmers. Long (1901) confirmed this view when he maintained that an uneducated person should not expect success in farming. The lack of a sound education in farming technology and management by most PT/SF has not only deprived farmers of the knowledge to determine for themselves what their particular needs are, but has also exposed them to financial difficulties, as indicated by their meager farm incomes. Most farm educational programs have focused upon the needs of the commercial, full-time farmers. The lack of attention given the PT/SF pointed the researchers to the need to help the affected farmers resolve their farm problems.

## PURPOSE AND OBJECTIVES

The purpose of this study was to determine the farm management educational needs of PT/SF in selected Ohio counties. The objectives of this study were:

1. To describe PT/SF on the basis of their demographic characteristics.
2. To determine the farm management educational needs of farmers in this study.
3. To determine the relationship between the selected demographic characteristics, and the computed farm management educational needs of PT/SF in selected Ohio counties.
4. To determine if the farm management educational needs of PT/SF in predominantly commercial counties were significantly different from that of PT/SF in predominantly non-commercial counties.

## METHODOLOGY

The target population for this study was the PT/SF in selected Ohio counties. There were two frames for this study. The first frame consisted of the 18 counties within a 50-mile radius of Columbus, Ohio. These 18 counties were stratified based on annual farm income of farmers into counties predominated by 1) part-time and small scale, non-commercial, and 2) commercial farmers. Item one (1) of the questionnaire served as a screen item to verify small scale on the basis of gross income and/or part-time status. A random sample of two counties within each of the aforementioned strata were selected for purposes of comparing the educational needs of farmers in these two categories of counties. Clinton and Marion Counties represented counties with predominantly PT/SF, non-commercial farmers. The selection involved the use of the multi-stage random sampling technique. The second stage consisted of a frame of part-time and small-scale farmers in the four selected Ohio counties. The data were collected by a researcher-developed mailed questionnaire, which employed a summated (Likert-type) scale for the measurement of the perceived farm management educational needs of PT/SF as produced by the literature and verified by the panel of experts. A formula recommended by Elliott (1980) was employed to determine the sample size ( $n = 196$ ) for a 95 percent confidence level and a 5 percent margin of error. Farm management educational needs of PT/SF in selected Ohio counties were determined using the Borich model. The statistical Package for the Social Sciences (SPSSX) was employed to analyze the data. Description, correlational and inferential statistics were employed.

## FINDINGS AND CONCLUSIONS

Findings regarding Objective 1, to describe PT/SF on the basis of their demographic characteristics, revealed that the majority of the PT/SF were males who operated farms of 50-150 acres (mode) for 11 or more years, and were between 35-44 years of age. Findings further revealed that the majority of these PT/SF were high school graduates who principally produced crops.

The continuum posed by the rating scale was 0 through 7. Figure 1 illustrates how these mean data might be interpreted. Each subject responded once to the scale for knowledge and once for importance.

### Instrument Scale

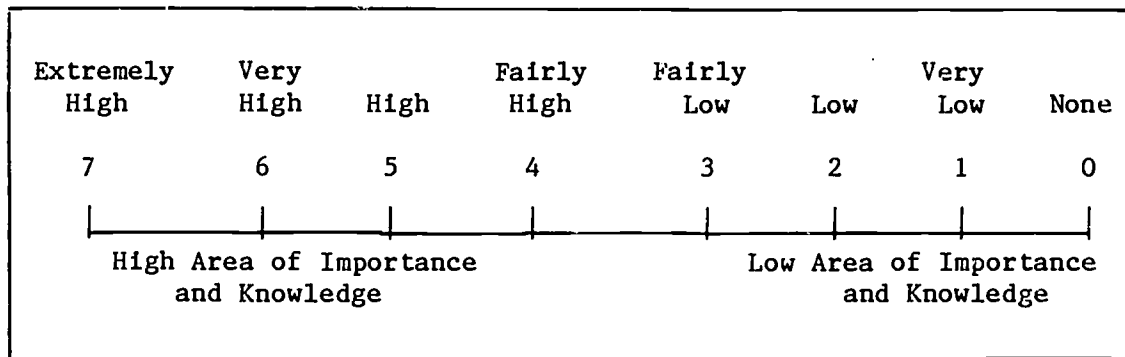


Figure 1. Interpretation of Scaling

### Interpretation

Given the above Figure as a basis for interpretation, scores above and below the theoretical midpoint of 3.5 took on meaning. Responses were made twice to each item: once for importance and once for current knowledge. Importance scores above 3.5 would be interpreted as "high" with the appropriate scale adverb applied; and below 3.5 would be interpreted as "low" in the same manner. Knowledge scores would be interpreted in the same manner. Note conceptually, however, that high importance and high knowledge would constitute a desired state. However, if high importance existed with low knowledge, then this constitutes a discrepancy. This discrepancy is the basis of the Borich formula. A high level of knowledge and low importance would produce a negative score for need and vice versa.

The computation of the educational needs was possible with the Borich's formula  $EN = (In - Kn) IG$ , employed in this study, where:  $In$  = the perceived importance of the items to the farmers;  $Kn$  = the perceived knowledge of the items by farmers;  $IG$  = the perceived average importance of the competency as rated by the respondents; and  $En$  = the computed educational need.

Findings revealed that PT/SF do have needs for farm management education in the selected Ohio Counties. Findings revealed the four most needed areas of farm management education by PT/SF in this study as being: 1) farm tax management; 2) marketing farm products; 3) determining farm insurance needs; and 4) farm recordkeeping. Table 1 illustrates these among the six highest categories of competencies. Each category was comprised of several competency items.

Table 1

Rank Order of the Six Categories of Farm Management Educational Needs.

A Descending Order of the Six Categories of Farm Management Educational Needs	Rank	X	SD
Farm tax management	1	8.23	10.62
Marketing farm products	2	8.11	9.08
Determining farm insurance needs	3	6.06	7.29
Farm recordkeeping	4	5.13	10.39
Planning and organizing the farm	5	2.43	6.26
Farm financial and credit management	6	-2.26	8.31

Within the four categories of greatest educational needs, the 15 most needed competencies of the 51 competencies considered were presented in Table 2 to illustrate to the reader the nature of the competencies rated for highest need.

Table 2

Rank Order of the Computed Farm Management Educational Needs

Farm Management Competencies	Rank	$\bar{X}$	SD
Determine how local inheritance tax is paid.	1	10.57	11.91
Determine when to market products.	2	10.32	10.28
File the appropriate tax forms.	3	9.75	13.03
Analyze methods of marketing products.	4	9.42	9.63
Interpret market reports.	5	9.02	10.26
Make a state income tax return.	6	8.63	12.67
Compare storage cost with selling at harvest.	7	8.41	9.45
Determine how to report federal income tax.	8	8.35	13.93
Determine the appropriate tax.	9	8.33	10.77
Determine what property to insure.	10	8.14	8.92
Follow product price trends.	11	7.99	10.63
Determine the appropriate time to insure.	12	7.81	8.86
Calculate expected returns and profit from sales.	13	7.56	9.02
Determine how to assess your personal property for tax purposes.	14	7.50	10.31
Determine the type of insurance to carry.	15	7.26	7.44



Table 3

Relationship Between Characteristics and Categories of Educational Needs

Categories of Farm Management Educational Needs	Correlation Coefficients (r)							
	Level of Educational Attainment	Days Worked	Age	Farm Size	Tenure in Farming	Sex	Marital Status	Type of Enterprises
Planning and organizing the farm	-.24	.00	.11	-.02	.10	-.05	.01	.32
Farm financial and credit management	-.61	-.54	-.06	.06	.23	-.07	-.29	.35
Farm recordkeeping	-.47	-.20	.19	-.08	.07	.12	-.11	.48
Farm tax management	.56	-.07	-.18	.01	-.08	.35	-.13	.44
Determining farm insurance needs	-.28	-.07	-.19	.09	.24	.10	-.07	.53
Marketing farm products	-.33	-.12	-.13	-.06	-.17	.17	-.08	.59

Findings regarding Objective 3, to determine the relationship between the selected demographic characteristics and the computed farm management educational needs of PT/SF in selected Ohio counties in this study, revealed a range of negligible to substantial relationships. Table 3 illustrates these findings.

Except for the moderate to substantial positive relationships which existed between type of principal farm enterprise and the categories of computed educational needs, there were negligible to low relationships between the demographic characteristics and the categories of computed educational needs. These negligible to low relationships indicated that farm management educational programs developed on the basis of the identified needed competencies in this study would be equally suitable for PT/SF irrespective of their characteristics.

Examining the relationship between the type of self-repeated principal farm enterprise and the calculated needs categories, findings revealed that PT/SF engaged in livestock production indicated a greater need for farm management education in the area of "marketing farm products."

A substantial negative relationship between "level of educational attainment" and farm financial and credit management indicated that the more formal education the PT/SF had, the less their educational needs in financial and credit management. Another substantial negative relationship between "level of educational attainment" and farm tax management followed the preceding reasoning.

Findings with respect to Objective 4, of determining if the farm management educational needs of PT/SF in predominantly commercial counties were significantly different from that of PT/SF in predominantly non-commercial counties, revealed that there were no significant differences. Table 4 illustrates these findings. It is important to point out that, although there were no statistical differences, there may be some practical differences in the order of preference for the needed farm management competencies as indicated by PT/SF in the two categories of counties.

Table 4

Chi-square Test of Significant Differences Between PT/SF in Commercial and Non-Commercial Counties

Categories of Farm Management Educational	$\chi^2$	D.F.	p.Level
Planning and organizing the farm	39.00	37	.38
Farm financial and credit management	18.00	16	.32
Farm recordkeeping	30.95	30	.42
Farm tax management	31.83	33	.53
Determining farm insurance need	22.48	22	.43
Marketing farm products	38.00	34	.29

=.05

## RECOMMENDATIONS

1. Vocational agricultural teachers and agricultural extension agents should consider these competencies when developing future farm management educational programs for PT/SF in the selected Ohio counties.
2. Further study of the competencies in other areas of farm management, such as "farm legal requirements," "farm labor management," and "farm equipment repairs," need to be conducted.
3. In view of the findings from this study, which revealed no significant difference in the educational needs of PT/SF within counties and between commercial and non-commercial counties; farm management educational programs based on the competencies identified in this study should be the same for PT/SF within the selected counties.
4. There is need for replication of this study in the future to determine if the educational needs of PT/SF in the selected Ohio counties remain the same or change with time, with attention to any political, policy or technical changes which might precipitate fluctuations in needs.

5. A study designed to assess the educational needs of PT/SF in other Ohio counties and states other than Ohio would be most appropriate as this would help enhance the generalizability of this type of study across the U.S.

6. Given that the farmers were between 35-44 years of age and had been farming for about 11 years, they may have begun farming between 24-33 years of age. Educators, particularly vocational agriculture instructors working with young farmer groups, may need to focus on this age range as a focal point for recruiting students into their groups.

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## SUMMARY OF RESEARCH SERIES

Demographic studies of rural America have revealed trends in the number and size of farms. The number of small and part-time farms as a percentage of the total number of farms has been increasing. Agencies offering educational services to rural areas have been realizing that the needs of small-scale farmers may be quite different than the needs of full-time farmers who normally manage much larger operations. This study is an attempt to discover the nature of the needs of part-time farmers, especially in the area of management.

This summary is based on a Doctor of Philosophy thesis by Okon E. Uko under the direction of Larry E. Miller. Dr. Uko returned to his home country of Nigeria and is now deceased. Special appreciation is due Dr. Edgar Persons, Department of Vocational and Technical Education, University of Minnesota; Dr. Merlin Wentworth, Cooperative Extension Field, The Ohio State University and State Department of Education, Ohio; Dr. Joe Townsend, Department of Agricultural Education, Texas A&M University; and Dr. L. H. Newcomb, Professor and Chairperson, Department of Agricultural Education, The Ohio State University, for their critical review of this manuscript prior to its publication.

Research has been an important function of the Department of Agricultural Education since it was established in 1917. Research conducted by the Department has generally been in the form of graduate theses, staff studies and funded research. It is the purpose of this series to make useful knowledge from such research available to practitioners in the profession. Individuals desiring additional information on this topic should examine the references cited.

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